



The Blurb

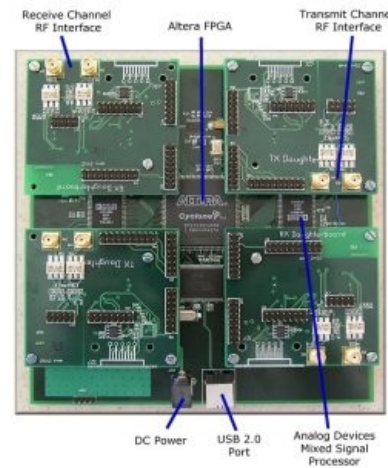
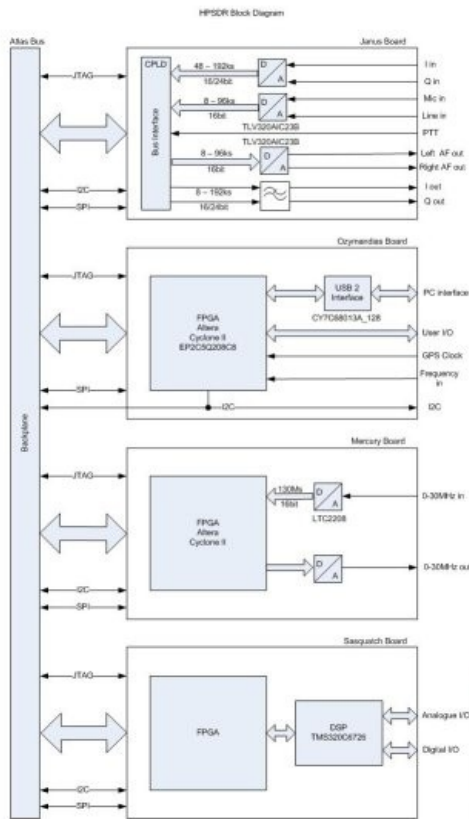


Newsletter of The Phil-Mont Mobile Radio Club
Public Service Since 1949

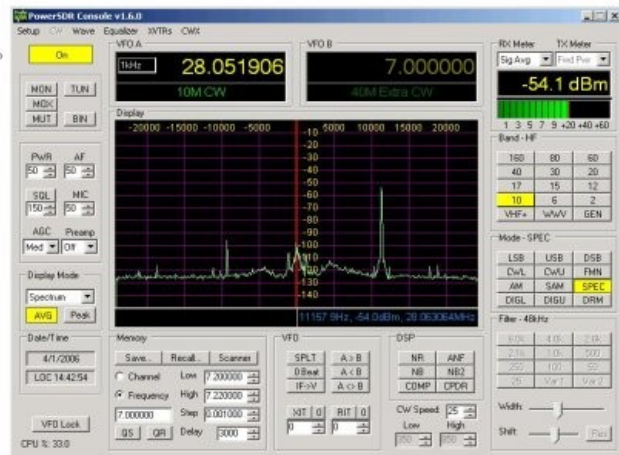
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July 2006



Software Defined Radio?



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The *Blurb* is published monthly by, and for, the members of **The PHIL-MONT MOBILE RADIO CLUB, INC.** whose purpose is to promote Amateur Radio in general, and Mobile Radio in particular. *Copying and quoting* is permitted with a credit line. We gladly exchange publications with other amateur radio clubs. Requests should be sent to the Editor. *Subscriptions* are available to non-members for \$10, addressed to the Treasurer.

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Labels and mailing: WB3KOJ & WB3KOH

Submissions deadline: all copy must be in the hands of the Editors by the 20th of the previous month.

Sunday Morning Net Schedules

- **2 Meter/ 70cm Net**.....at 09:30et on W3QV repeater
- **10-on-10 Net**at 10:00et 28.393 MHz USB (±QRM)
- **75 meter Net**at 10:20et 3.993 MHz LSB

Contact Phil-mont:

P.O. Box 88

Abington, PA 19001

<http://www.phil-mont.org>

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For club information: contact any club officer, or the repeaters listed below. Address or club directory changes, and articles that are for the membership e-mail list should be sent to: wb3koj@comcast.net

The club meets at 7:30 PM on the **second non-holiday Wednesday** of every month except July and August at

The Masonic Village at Lafayette Hill

801 Ridge Pike

Lafayette Hill, PA 19444-1799

All visitors are welcome!

License Examinations

are held on the **first non-holiday Thursday** each month (except July and August) at
Northeast High School,

Cottman and Algon Streets, Philadelphia PA

Registration begins at 6:00 P.M. Enter through the SPARC wing. Exams begin and doors closed and locked at **6:30 P.M. Sharp!** Applicants should call Dusty ND3Q at 215-879-0505 (day) or 215 482 0386 (eve) for the latest information.

Club Stations

W3QV Club Repeater - Trustee: W3BBB

Ridge & Port Royal Avenues, Philadelphia, PA

147.03 MHz + PL 91.5 Hz 444.80 MHz + PL 186.2 Hz

Reach us on Echolink through WU3I-L

W3AA -Trustee: WU3I

W3EM - Field Day/special event station Trustee: W3VVS

President:KB3IV

Ed Masarsky

15 Poe Av.

Wyncote PA 19095

kb3iv@arrl.net

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Richard A. Moll

roger.mike@verizon.net

Asst. Treasurer: N3MT

Micheal P. Taraborrelli

michaelmt_1999@yahoo.com

Directors: N3FH(06) N3MT(06) K3XS(06) W3BBB(07) WU3I(07) N3XKE(07) W3STW(A)

Committees

Archives: NG3P
Audit: NS3K
Awards: open

Blurb folding:
WB3KOJ & WB3KOH
Directory:WB3KOJ
DX: N3MT
Emerg.Coord.: K3HWE
Field Day: KE3QB

Internet: K3XS
Membership: N3XKE
Net Control: KB3IV
Publicity: W3RM
Program: Club VP

Public Service: KE3QB
Refreshments: W3AOK
Repeater: W3BBB
Skywarn: WX3PHI
Sunshine: N3GLU
Youth: N3MT

TVI: W3VVS
VE Program: ND3Q
W3AA Trustee: WU3I
Welcome: K3CJ.

Software Defined Radio experimentation expands the horizons of amateur radio

-de Maggie K3XS

Some amazing leading-edge experimental work is being done by radio experimenters (including a lot of radio amateurs) in the field of software defined radio...

Software radio is the technique of getting code as close to the antenna as possible. It turns radio hardware problems into software problems. The fundamental characteristic of software radio is that software defines the transmitted waveforms, and software demodulates the received waveforms. This is in contrast to most radios in which the processing is done with either analog circuitry or analog circuitry combined with digital chips. (from Exploring GNU Radio by Eric Blossom)

A software-defined radio is characterized by its flexibility: Simply modifying or replacing software programs can completely change its functionality. This allows easy upgrade to new modes and improved performance without the need to replace hardware. SDRs can also be easily modified to accommodate the operating needs of individual applications. There is a distinct difference between a radio that internally uses software for some of its functions and a radio that can be completely redefined in the field through modification of software. The latter

is a software-defined radio. A Software-Defined Radio for the Masses, By Gerald Youngblood, AC5OG, QEX Jul/Aug 2002

On a little reflection, it's clear that there are some unique advantages to this approach: modulation techniques and transmission modes can be improved or replaced without changes to the hardware parts of the radio; large chunks of bandwidth can be examined for signals, ultrawideband, frequency-agile and digital transmission techniques are natural for this technology.

Let's take an overview of some of the more prominent SDR projects:

GnuRadio

GNU Radio is a free software toolkit for building software radios. The availability of a zero-cost software base for SDR has served as a catalyst for a number of other SDR projects; while GNU Radio can do some pretty amazing processing with some fairly ordinary sound cards, when the signal processing power is augmented with DSP hardware, much more processing can be done.

<http://www.gnu.org/software/gnuradio/>

USRP

The **Universal Software Radio Peripheral** (USRP) is an extremely flexible USB device that connects your PC to the RF world. The USRP consists of a small motherboard containing up to four 12-bit 64M sample/sec ADCs, four

14-bit, 128M sample/sec DACs, a million gate-field programmable gate array (FPGA) and a programmable USB 2.0 controller. Each fully populated USRP motherboard supports four daughterboards, two for receive and two for transmit. RF front ends are implemented on the daughterboards.

A variety of daughterboards is available to handle different frequency bands.

- BasicRX, 0.1-300 MHz receive
- BasicTX, 0.1-200 MHz transmit
- LFRX, DC-30 MHz receive
- LFTX, DC-30 MHz transmit
- TVRX, 50-860 MHz receive
- DBSRX, 800-2400 MHz receive
- RFX400, 400-500 MHz Transceiver
- RFX900, 800-1000 MHz Transceiver
- RFX1200, 1150-1400 MHz Transceiver
- RFX1800, 1500-2100 MHz Transceiver
- RFX2400, 2250-2900 MHz Transceiver

For amateur radio use, low-power daughterboards are available that receive and transmit in the 440 MHz band and the 1.24 GHz band. A receive-only daughterboard based on a cable modem tuner is available that covers the range from 50 MHz to 800 MHz. Daughterboards are designed to be easy to prototype by hand in order to facilitate experimentation.

<http://www.hamsdr.com>

<http://www.ettus.com>

SDR-1000

For the first time in ham history, you can purchase 'off the shelf' an HF and 6 meter transceiver that uses software to define its functionality – a software defined radio.--Steve Ford, April 2005 QST

For the less-experimentally inclined, Flex Radio has an off-the-shelf product available in their SDR-1000.

They have made their PowerSDR control software available under the GPL free software licence, and several other projects (such as the AmQRP Softrock series <http://www.amqrp.org/kits/softrock40/index.html>) have taken advantage of this.

<http://www.flex-radio.com/>

HPSDR: High Performance Software Defined Radio

Lyle Johnson KK7P gave a presentation at the Dayton Hamvention 2006 on the High Performance Software Defined Radio project. The HPSDR is an open source (GNU type) hardware and software project intended as a "next generation" Software Defined Radio (SDR) for use by Radio Amateurs ("hams") and Short Wave Listeners (SWLs). It is being designed and developed by a group of SDR enthusiasts with representation from interested experimenters worldwide. The discussion list membership currently stands around 300 and includes such SDR enthusiasts as Phil N8VB, Lyle KK7P, Bill KD5TFD, and Phil VK6APH.

The following subprojects are part

of HPSDR:

- [ATLAS - Backplane](#)
- [JANUS - ADC/DAC Board](#)
- [OZYmandias - HPSDR Host Interface & Control](#)
- [MERCURY - 0-30MHz Direct Sampling Receiver](#)
- [SASQUATCH - DSP back-end](#)
- [GIBALTAR - GPS-disciplined Frequency Standard](#)
- [PROTeus - Prototyping Board](#)
- [HORTON - Receiver Module](#)
- [PINOCCHIO - Extender Card](#)
- [CASIMIR - 0MHz to 2.5GHz Transmitter Card](#)

Read more and download Lyle's presentation and slides at

<http://hpsdr.org/>

FCC Directs Manassas BPL System to Resolve Amateurs' Interference Complaints

 WINGTON, CT, Jun 16, 2006--In two strongly worded letters, the FCC's Enforcement Bureau has directed the Manassas, Virginia, BPL system to take appropriate steps to eliminate harmful interference to Amateur Radio operators. Several hams in the Manassas area [have complained](#), some repeatedly, about severe interference from the BPL system, operated by COMTek on the city-owned power grid. The FCC minced no words in detailing what it wants the city and BPL operator COMTek to do to ensure its system complies with Part 15 rules governing BPL systems and even hinted that it may shut down all or part of the system. [One of the FCC let-](#)

[ters](#) followed up on a complaint from Dwight Agnew, AI4II, of BPL interference to his mobile operations.

FCC Spectrum Enforcement Division Chief Joseph Casey told the city and COMTek June 16 that within 20 days he wants a "detailed report on the actions you have taken and the progress you have made in resolving the interference complaint or reducing the emissions in the area referenced in Mr Agnew's complaint to 20 dB below the Part 15 limit," a level the FCC maintains generally is sufficient to eliminate BPL interference to mobile operations. Additionally, Casey said the Commission wants to know "the specific steps you will take to inform customers of a cessation of service in the event you are directed to cease operations, either in part or system-wide."

In March, Casey had requested that the city and COMTek follow up on Agnew's January 19 complaint of harmful BPL interference along Virginia Business Route 234. He also instructed the city to conduct system compliance measurements and to "resolve any continuing harmful interference."

Lost Patience

ARRL CEO David Sumner, K1ZZ, said the League is "especially gratified" that the Enforcement Bureau's Spectrum Enforcement Division has ordered the City of Manassas to take steps to prepare for a cessation of BPL services. "Clearly, the FCC has lost patience with COMTek's reliance on misleading news releases as a substitute for meaningful solutions to the ongoing

interference," he said.

In an April 7 news release COMTek Vice President Walt Adams called the Manassas BPL system "a real success story" and said its testing showed "an almost identical" level of interference whether or not the system was in operation. It made a similar claim to the FCC in Agnew's case. Nonetheless, Casey said, the report from Manassas and COMTek failed to indicate that they took steps to specifically address Agnew's complaint or even to conduct tests with Agnew present. Neither did the test measurements demonstrate that emissions in the area described in Agnew's complaint had been reduced to at least 20 dB below the Part 15 limit, Casey said.

COMTek has indicated it expects emissions can be reduced to 20 dB below the Part 15 limit once second-generation BPL equipment is in place along the Virginia Business Route 234 corridor by the end of July. Casey said that wouldn't do. "We note that a failure to respond until the end of July to any complaint alleging harmful interference in an effort to determine if the new equipment resolves the matter is not sufficient," he pointed out in a footnote.

Casey said Manassas and COMTek must address and "reach a resolution" with regard to Agnew's interference complaint "as soon as practicable."

System Out of Compliance

Based on the engineering reports the FCC received from the city and

COMTek in response to the Agnew complaint, Casey said, "it appears that the BPL system is not in compliance with the Commission's emission requirements at several frequencies," although none were in the amateur bands. "You are directed to take immediate steps to eliminate all excessive emissions," Casey directed.

Manassas and COMTek must detail within 30 days steps taken to clean up the system as well as any additional actions necessary for the system to remain in compliance with Commission rules.

The Group of Five

In a [second letter](#), Casey requested Manassas and COMTek to examine and address specific long-standing interference complaints from George Tarnovsky, K4GVT; Donald Blasdell, W4HJL; Bill South, N3OH; Jack Cochran, WC4J, and Arthur Whittum, W1CRO. Manassas and COMTek must "take appropriate remedial steps to eliminate any instances of harmful interference" or reduce emissions in the areas cited in the complaints to 20 dB below the Part 15 limit, he instructed.

He also reiterated his call for system compliance. "We direct the City of Manassas/COMTek to make measurements at the locations described in each of the complaints during the hours of peak usage of the system by BPL customers," he said.

Point of Unintelligibility

In a letter to the FCC in early

May, Whittum protested that "the digital hash from BPL obliterated even strong signals on 7255 kHz to the point of unintelligibility." In April South reported hearing BPL interference in eight locations around the City of Manassas within a period of several hours. He described the interference as continuous and pervasive and said the system operators "have apparently not acted in good faith" to eliminate the problem.

Casey said the FCC wants a report within 30 days on steps taken to address the five radio amateurs' specific interference complaints and eliminate excessive emissions.

Last October, the ARRL filed a consolidated complaint on behalf of Tarnovsky, Blasdell and South, asking the FCC to order the BPL system shut down "until the operator can demonstrate compliance with the requirement that it not cause harmful interference to licensed radio services."

Radio Amateurs Encouraged

Tarnovsky said the complainants are encouraged by the FCC's response to COMTek's reports and are looking forward to the results of the Commission-directed testing.

"I think I can speak for all parties in saying that we're looking forward to a BPL interference-free Manassas," he said.

Philmont June General Meeting

Philmont had eleven members present.

Ed KB3IV called the meeting to order shortly before 8:00pm. Dusty ND3Q reported on VE testing which was the last one before the summer break.

Dick W3RM reported on both FAR (Foundation for Amateur Radio) scholarships. Philmont sponsors both the Joanne Hoch N3FTC Memorial scholarship Fund and the Claude H. Haring W3IIM Memorial Scholarship Fund.

Steve WU3I reported that Al W3STW, Bill W3AOK and himself have removed Philmont's equipment from Northeast High school with W3YC's equipment installed in the console and operational. Carmen KE3QB talked about the up and coming Field Day as Steve WU3I handed out tee shirts to those that had ordered them.

The meeting was adjourned at 8:13pm and Ed KB3IV provided an interactive demonstration of Echolink to the members.

73 de WA3KIO



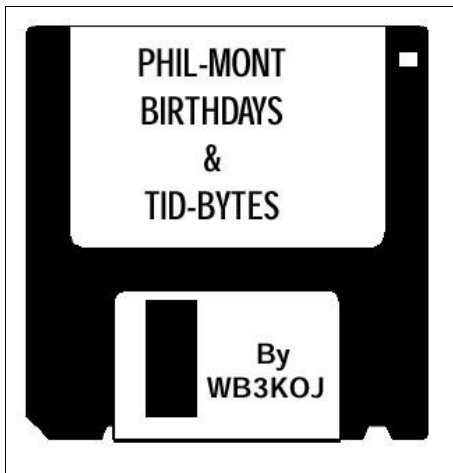
Much to my surprise the other day I just found out that my friend Ed Rykaczewski W3ALM had passed away July 7, 2005!

He had been a member of PhilMont and we had worked together at Philco Corp. I called his home to determine if Ed would be at the Philco annual dinner and was informed by his wife of his passing. So now I know why he didn't renew his membership for 2006.

Ed died of cancer July 7, 2005, at his home surrounded by family and pastor at the age of 81. He served on the USS North Carolina BB55 as an Electricians Mate. Ed obtained his private pilots license when he came out of the service in 1945 and flew out of Wings Field and later Pottstown/ Limerick. He was a member of the Civil Air Patrol. Ed was a Technical Writer and Editor in Technical Publications at Philco Corp and later at General Electric, retiring in 1988.

Military services were held July 13, 2005 at Indiantown Gap National Cemetery with military honors. Memorial contributions may be made in Ed's memory to Montgomery Cancer Center, Clinical Trials Program, 1330 Powell Street, Suite 308, Norristown, Pa. 19401.

regards,
Paul W3VVS



Membership Stats

At press time P.M.R.C. has:

93 Full paid members
8 Family members
0 Youth members
0 Pending members
1 Honorary member

Reinstated Member:

Gerald L. Dubzak, Jr. - N3RPW "Jerry"
13 Jasmine Lane
Sicklerville, NJ 08081-4107

Phone: Home - 856-629-5898 Work - 609-417-6901

DOB: 02/08/1977
License Class: Technician (Exp. 03/18/2014)
ARRL Member: Yes (Life Member)
Email address: N3RPW@arrl.net

July Birthdays

01 Nick Sparozic - AA3WA
02 Ted Katz - N3OWM
 Alice Popovic (XYL W3AOK)
03 Nicole Bohlander (XYL WA3KLR)
04 Marion Blum (XYL W3PTB)
10 Natalie Gordon - WB3KOH
 James Perry - W3JRP
12 Grace Smith (XYL K3GBA)
14 Larry Clifford - W3UY
19 Christine Fichera (XYL KB3DQH)
20 Valerie Hill (XYL KB3HNB)
23 Art Weiner - WX3PHI
25 Jinny Haring - W3IIN
 Barbara Klein (XYL W3WXC)
29 Jim Larkin - KA2FFP
31 Steve Hoch - WU3I

New Member Applications

Richard DeVirgilius - KB3JWK - Rick (Regular membership)
7860 Devon Street
Philadelphia, PA 19118-3504
Home phone: 215-908-7225
DOB: 12/24/1953
License Class: General - Expires 6-15-2013
ARRL Member, Expires 1/31/2007
E-mail Address: RDV12242000@yahoo.com

Andrew J. Furlong - KC2PMW - Andrew (Youth Membership)
26 S. Childs Street
Woodbury, NJ 08096
Home phone: 856-845-7032
DOB: 04/06/1993
License Class: Technician - Expires 04/11/2016
E-mail Address: furshort@verizon.net

We hope you had
a good Field Day.
Have a great
summer!

Remember the Blurb publishes
every month of the year; we
need your articles and photos!

July 2006 with PMRC

Sat 01	
Sun 02	Contact KB3IV for NCS scheduling
Mon 03	
Tue 04	
Wed 05	No Board meetings - summer break
Thu 06	No VE testing – summer break
Fri 07	
Sat 08	
Sun 09	Contact KB3IV for NCS scheduling
Mon 10	
Tue 11	
Wed 12	No PMRC meetings - summer break
Thu 13	
Fri 14	
Sat 15	
Sun 16	Contact KB3IV for NCS scheduling
Mon 17	
Tue 18	
Wed 19	
Thu 20	BLURB DEADLINE
Fri 21	
Sat 22	
Sun 23	Contact KB3IV for NCS scheduling
Mon 24	
Tue 25	
Wed 26	
Thu 27	
Fri 28	
Sat 29	
Sun 30	Contact KB3IV for NCS scheduling
Mon 31	

First Class Mail

The Phil-Mont Mobile Radio Club, Inc
641 Kismet Road Philadelphia PA 19115

The Blurb